



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,502	01/15/2002	Silke Kratschmer	Mo-6925/LeA 33,899	6341

157 7590 08/13/2003

BAYER POLYMERS LLC
100 BAYER ROAD
PITTSBURGH, PA 15205

EXAMINER

BOYKIN, TERRESSA M

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/031,502	Applicant(s) KRATSCHMER ET AL.	
	Examiner Terressa M. Boykin	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8 -10 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5373082 see abstract, cols. 2-5, claim 1 and excerpts below.

US 5373082 discloses a process for the production of polycarbonates by melt transesterification is disclosed. Accordingly, polycarbonate waste is dissolved in monophenols and at an elevated temperature and in the presence of a catalyst degraded to yield oligocarbonates, diaryl carbonates and diphenols. Following the optional separation of fillers and other additives there is produced by partial recondensation and the distillation of monophenol a higher viscosity oligocarbonate having a OH and aryl carbonate terminal groups and a weight average molecular weight of 8000 to 18000, the oligocarbonate thus produced is then polycondensed to form a polycarbonate resin.

US 5373082 also discloses that the particularly preferred diphenols are 2,2-bis-(4-hydroxyphenyl)propane and 1,1-bis-(4,hydroxyphenyl)-3,3,5-trimethylcyclohexane which anticipate applicants claim 1 with regard to the definitions for R etc.

The reference further discloses that suitable monophenols for the process according

Art Unit: 1711

to the invention include in particular low-boiling phenols, such as, phenol itself, cresols, chlorophenols, xlenols, isopropylphenols and p-tert.-butylphenol, preferably phenol and cresols, particularly preferably phenol. The molar ratio of starting polycarbonate (as molar weight unit) to monophenol is between 1:1 to 1:20, preferably 1:1.5 to 1:10. The temperatures for cleavage of the starting polycarbonates with the monophenols are between 100.degree. C. and 295.degree. C., preferably between 150.degree. C. and 250.degree. C. The process is optionally performed at pressures above atmospheric in order to keep the monophenol in the liquid phase.

The reference further notes that the diaryl carbonates arising from cleavage of the polycarbonate result from the monophenols used for the cleavage and from the chain terminators used in the polycarbonates to be cleaved. With regard to claims 2 and 3 note that US 5373082 discloses The OH/aryl carbonate terminal group ratio of these oligocarbonates was determined by separately determining the OH terminal groups by photometry with TiCl_4 and determining the aryl carbonate terminal groups by HPLC analysis of the monophenol formed after complete saponification. In these oligocarbonates, the OH terminal groups and aryl carbonate terminal groups generally together add up to 100%. See also claims 4 and 5 for the amounts contained after saponification.

The reference also discloses that the low-branching or purposefully branched polycarbonates obtainable in accordance with the process according to the invention may have customary additives, stabilizers etc. incorporated into them in a known manner.

Art Unit: 1711

With regard to applicants' claim 4 regarding a phosphonium to be employed as a catalyst, note claim 1 of the reference discloses that such catalyst is employed also.

With regard to claims 8-10 note that the reference states that the polycarbonates obtainable in accordance with the process according to the invention may be processed in customary machines, for example, in extruders or injection molding machines, into any desired moldings, for example, film or sheet in a customary manner. These polycarbonate moldings may be used industrially in a known manner, for example, in electrical engineering.

Consequently, in view of the above, there appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5373082 in view of USP 5922826 claim 4 and abstract.

Art Unit: 1711

With regard to applicants' Claim 6, i.e. tetraphenylphosphonium phenolate, such is well known in the art as a catalyst for polycarbonate production. Note, for example, the reference USP 5373082 discloses a polycarbonate prepared from the same components as claimed by applicants including the use of a quaternary phosphonium catalysts except for the specifically named quaternary phosphonium catalyst, i.e. tetraphenylphosphonium phenolate disclosed herein. With regard to the specific phosphonium claimed in applicants' Claim 6, i.e. tetraphenylphosphonium phenolate, such is well known in the art as a catalyst for polycarbonate production. Note claim of the reference US 5922826 produces moldable polycarbonates products having similar characteristics and specifically states in claim 4:

"The process for producing a polycarbonate according to claim 1 wherein the component (a) is tetramethylammonium hydroxide and the component (b) is selected from the group consisting of tetraphenylphosphonium tetraphenylborate, tetraphenylphosphonium phenolate and tetraphenylphosphonium hydroxide."

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a tetraphenylphosphonium phenolate as the catalyst for the process of making a polycarbonate having moldable properties since the reference states in the abstract therein that such catalysts result in a polymer having high efficiency, high quality, excellent appearance, heat and hydrolysis resistance.

Correspondence

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Terressa Boykin, via the receptionist whose telephone number is (703) 308-2351. The examiner can

Application/Control Number: 10/031,502

Page 6

Art Unit: 1711

normally be reached on Monday through Friday from 8:00a.m.-5:30 p.m.

tmb


Examiner Terressa Boykin
Primary Examiner
Art Unit 1711